

ACEC/NCDOT Bridge Subcommittee Bridge Design Workshop Series

Integral End Bent Bridge Design
March 21, 2006



The background of the slide is a photograph of a modern building with a glass facade, partially obscured by a dark blue overlay. A car is visible parked in front of the building. The word "Introduction" is centered in the middle of the slide, overlaid on a light beige horizontal band.

Introduction

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Goals of the Bridge Design Workshop Series

- Foster communication between NCDOT and PEFs.
- Attain greater consistency in bridge design for NCDOT.
- Build relationships among the NC bridge engineering community.

Introduction

Topics for Today's Workshop

- Range of methods for designing IEB bridges.
- Geotechnical aspects of IEB design and behavior.
- NCDOT IEB policy and suggested details.

Introduction

Today's speakers

- Rick Fauteux, HDR Engineering
- Brian Keaney, S&ME
- Gichuru Muchane, NCDOT

The background of the slide is a dark blue-tinted photograph of a modern building with a glass facade. The building's structure, including its columns and beams, is visible through the glass. In the foreground, a dark-colored car is parked on a paved surface. The overall image is dimly lit, emphasizing the architectural details.

Benefits to Using Integral End Bents

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- Elimination of expensive joints.
- Elimination of expensive bearings.
- Design efficiency – significant reduction to longitudinal and transverse forces to adjacent interior bents through load “sharing”.
- Eliminates need for enlarged seat widths and restrainers to account for seismic events.

Benefits to Using Integral End Bents

- Increased end span ratios.
- Improved protection for ends of weathering steel girders.
- Faster construction.
- Improved torsional rigidity at ends of curved girder bridges
- Reduced costs to owner.